



NUCLEAR REGULATORY COMMISSION

[NRC-2024-0161]

Regulatory Guide: Qualification of Fiber-Optic Cables, Connections, and Optical Fiber Splices for Use in Safety Systems for Production and Utilization Facilities

AGENCY: Nuclear Regulatory Commission.

ACTION: Final guide; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is issuing a new Regulatory Guide (RG) 1.257, “Qualification of Fiber-Optic Cables, Connections, and Optical Fiber Splices for Use in Safety Systems for Production and Utilization Facilities.” This RG describes an approach that is acceptable to the staff of the NRC for use in complying with the NRC’s regulations that address the environmental qualification of fiber-optic cables, connections, and optical fiber splices in safety systems in production and utilization facilities. This RG endorses, subject to the conditions described in Section C of the RG, the Institute of Electrical and Electronics Engineers (IEEE) Standard 1682-2023, “IEEE Standard for Qualifying Fiber Optic Cables, Connections, and Optical Fiber Splices for Use in Safety Systems in Nuclear Power Generating Stations.”

DATES: Revision 0 to RG 1.257 is available on **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Please refer to Docket ID **NRC-2024-0161** when contacting the NRC about the availability of information regarding this document. You may obtain publicly available information related to this document using any of the following methods:

- **Federal Rulemaking Website:** Go to <https://www.regulations.gov> and search for Docket ID **NRC-2024-0161**. Address questions about Docket IDs in Regulations.gov to Bridget Curran; telephone: 301-415-1003; email: Bridget.Curran@nrc.gov. For technical questions, contact the individual(s) listed in the “For Further Information Contact” section of this document.

- **NRC's Agencywide Documents Access and Management System**

(ADAMS): You may obtain publicly available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "Begin ADAMS Public Search." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, at 301-415-4737, or by email to PDR.Resource@nrc.gov. The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in this document.

- **NRC's PDR:** The PDR, where you may examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1-800-397-4209 or 301-415-4737, between 8 a.m. and 4 p.m. eastern time (ET), Monday through Friday, except Federal holidays.

Revision 0 to RG 1.257 and the regulatory analysis may be found in ADAMS under Accession Nos. ML25052A253 and ML24201A069, respectively.

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FOR FURTHER INFORMATION CONTACT: Sheila Ray, Office of Nuclear Reactor Regulation, telephone: 301-415-3653; email: Sheila.Ray@nrc.gov or Vance Petrella, Office of Nuclear Regulatory Research, telephone: 301-415-1048; email: Vance.Petrella@nrc.gov. Both are staff of the U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

SUPPLEMENTARY INFORMATION:

I. Discussion

The NRC is issuing a new guide in the NRC's "Regulatory Guide" series. This series was developed to describe methods that are acceptable to the NRC staff for implementing specific parts of the agency's regulations, to explain techniques that the

staff uses in evaluating specific issues or postulated events, and to describe information that the staff needs in its review of applications for permits and licenses.

RG 1.257 was issued with a temporary identification of Draft Regulatory Guide, (DG)-1427 (ADAMS Accession No. ML24201A068).

II. Additional Information

The NRC published a notice of the availability of DG-1427 in the *Federal Register* on October 29, 2024 (89 FR 85889) for a 30-day public comment period. The public comment period closed on November 29, 2024. Public comments on DG-1427 and the staff responses to the public comments are available in ADAMS under Accession No. ML25052A132.

III. Congressional Review Act

This RG is a rule as defined in the Congressional Review Act (5 U.S.C. 801-808). However, the Office of Management and Budget has not found it to meet the criteria at 5 U.S.C. 804(2).

IV. Backfitting, Forward Fitting, and Issue Finality

Issuance of RG-1.257, Revision 0 does not constitute backfitting as defined in section 50.109 of title 10 of the *Code of Federal Regulations* (10 CFR), “Backfitting,” and as described in NRC Management Directive (MD) 8.4, “Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests”; affect “issue finality of any approval issued under 10 CFR part 52, “Licenses, Certificates, and Approvals for Nuclear Power Plants”; or constitute forward fitting as defined in MD 8.4, because, as explained in this RG, licensees would not be required to comply with the positions set forth in this RG.

V. Submitting Suggestions for Improvement of Regulatory Guides

A member of the public may, at any time, submit suggestions to the NRC for improvement of existing RGs or for the development of new RGs. Suggestions can be submitted on the NRC’s public website at <https://www.nrc.gov/reading-rm/doc-collections/reg-guides/contactus.html>. Suggestions will be considered in future updates

and enhancements to the “Regulatory Guide” series.

VI. Executive Order (E.O.) 12866

The Office of Information and Regulatory Affairs determined that this RG is not a significant regulatory action under E.O. 12866.

(Authority: 42 U.S.C. 2011 *et seq.*)

Dated: August 7, 2025.

For the Nuclear Regulatory Commission.

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